

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

| | | | |
|-------------|---|-----------------|------------|
| Applicant: | Sumeet Sandhu et al. | Examiner: | Khai Tran |
| Serial No.: | 10/814,095 | Group Art Unit: | 2611 |
| Filed: | March 30, 2004 | Docket: | 884.B51US1 |
| Title: | MULTICARRIER RECEIVERS AND METHODS FOR SEPARATING TRANSMITTED SIGNALS IN A MULTIPLE ANTENNA SYSTEM | | |

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

MS Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

In compliance with the duty imposed by 37 C.F.R. § 1.56, and in accordance with 37 C.F.R. §§ 1.97 *et. seq.*, the enclosed materials are brought to the attention of the Examiner for consideration in connection with the above-identified patent application. Applicants respectfully request that this Supplemental Information Disclosure Statement be entered and the documents listed on the attached Form 1449 be considered by the Examiner and made of record. Pursuant to the provisions of MPEP 609, Applicants request that a copy of the 1449 form, initialed as being considered by the Examiner, be returned to the Applicants with the next official communication.

Pursuant to 37 C.F.R. §1.97(c)(2), Applicants hereby authorize the Commissioner to charge the fee of \$180.00 as set forth in 37 C.F.R. §1.17(p), to Deposit Account No. 19-0743. Please charge any additional fees or credit any overpayment to Deposit Account No. 19-0743.

The Examiner is invited to contact the Applicants' Representative at the below-listed telephone number if there are any questions regarding this communication.

Pursuant to 37 C.F.R. 1.98(a)(2), Applicant believes that copies of cited U.S. Patents and Published Applications, and Non-Published Applications identifiable by USPTO Serial Number, are no longer required to be provided to the Office. Notification of this change to this effect was provided in the United States Patent and Trademark Office OG Notices dated October 12, 2004 and October 19, 2004. Thus, Applicant has not included copies of any U.S. Patents or U.S. Patent Applications identifiable by serial number that may be cited with this submission. Should the Office require copies to be provided, Applicant respectfully requests that notice of such requirement be directed to Applicant's below-signed representative. Applicant acknowledges the requirement to submit copies of foreign patent documents and non-patent literature in accordance with 37 C.F.R. 1.98(a)(2).

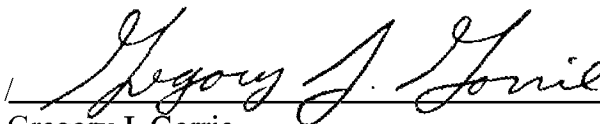
Respectfully submitted,

SUMEET SANDHU ET AL.

By their Representatives,

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.
P.O. Box 2938
Minneapolis, MN 55402
(480) 659-3314

By /



Gregory J. Gorrie
Reg. No. 36,530

| | | | | | | | | | | | |
|---|--|---------------------------|------------|--------------------|----------------|-----------------------------|----------------|-----------------------|------|----------------------|------------|
| Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Use as many sheets as necessary)</i> | <i>Complete if Known</i> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 40%;">Application Number</td> <td>10/814,095</td> </tr> <tr> <td>Filing Date</td> <td>March 30, 2004</td> </tr> <tr> <td>First Named Inventor</td> <td>Sandhu, Sumeet</td> </tr> <tr> <td>Group Art Unit</td> <td>2611</td> </tr> <tr> <td>Examiner Name</td> <td>Tran, Khai</td> </tr> </table> | Application Number | 10/814,095 | Filing Date | March 30, 2004 | First Named Inventor | Sandhu, Sumeet | Group Art Unit | 2611 | Examiner Name | Tran, Khai |
| Application Number | 10/814,095 | | | | | | | | | | |
| Filing Date | March 30, 2004 | | | | | | | | | | |
| First Named Inventor | Sandhu, Sumeet | | | | | | | | | | |
| Group Art Unit | 2611 | | | | | | | | | | |
| Examiner Name | Tran, Khai | | | | | | | | | | |
| Sheet 1 of 1 | Attorney Docket No: 884.B51US1 | | | | | | | | | | |

| US PATENT DOCUMENTS | | | | |
|---------------------|---------------------|------------------|---|----------------------------|
| Examiner Initial * | USP Document Number | Publication Date | Name of Patentee or Applicant of cited Document | Filing Date If Appropriate |

| FOREIGN PATENT DOCUMENTS | | | | |
|--------------------------|---------------------|------------------|---|----------------|
| Examiner Initials* | Foreign Document No | Publication Date | Name of Patentee or Applicant of cited Document | T ² |
| | WO-05029759A2 | 03/31/2005 | Sandhu, S. , et al. | |
| | WO-05029759A3 | 03/31/2005 | Sandhu, S. , et al. | |

| OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS | | | |
|--|----------------------|---|----------------|
| Examiner Initials* | Cite No ¹ | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. | T ² |
| | | "International Search Report for corresponding PCT Application No. PCT/US2004/029768", (Attorney Docket No. 884.B56WO1),(March 10, 2005),6 pgs. | |
| | | PAULRAJ, A., <u>Introduction to Space-Time Wireless Communications</u> , Cambridge University Press, Cambridge, UK,(May 2003), | |
| | | RENDE, D., et al., "Bit Interleaved Space-frequency Coded Modulation for OFDM Systems", <u>IEEE International Conference on Communication</u> , Vol.1 of 5, Wireless Information and Networking Group, ICC 2003,(May 11,2003),2827-2831 | |
| | | SAMPATH, H., et al., "Linear Precoding and Decoding for Multiple Input Multiple Output(MIMO) Wireless Channels", Dissertation, Doctor of Philosophy, Department of Electrical Engineering, Stanford University,(April, 2001),157 pgs. | |

EXAMINER

DATE CONSIDERED